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Job Vacancies, Australia methodology

Reference period May 2021

Released 1/07/2021

On this page

How the data is collected

Reference period

The JVS reference date is the third Friday of the middle month of the quarter, i.e. February, May, August and November. Job vacancies data relate to the number of vacancies which exist on the actual survey reference date only, and not for a monthly or quarterly period.

Scope and coverage

The survey covers all employing organisations in Australia (public and private sectors), except:

- enterprises primarily engaged in agriculture, forestry and fishing;
- private households employing staff; and
- foreign embassies, consulates, etc.

All job vacancies of organisations covered in the survey are in scope, except those:

- in the Australian permanent defence forces; and
- located outside Australia.

Collection method

Details of the total number of job vacancies available for immediate filling on the survey reference date are obtained on a quarterly basis from selected businesses. Data are collected via online electronic collection, and/or telephone interviews.

Follow-up procedures are in place to obtain information from respondents who do not lodge a completed form by the due date. The target minimum response is 95% for the survey as a whole, and approximately 90% for each state and/or industry.

Sample design

The sample is selected from the ABS Business Register (ABSBR) which is a list of businesses and organisations operating in Australia primarily based on registrations to the Australian Taxation Office's (ATO) Pay-As-You-Go Withholding (PAYGW) scheme. The population is updated quarterly to take account of new businesses, businesses that have ceased employing, changes in industry and employment levels and other general business changes.

A probability sample of statistical units (employing businesses) is drawn from the ABSBR. The statistical unit for the survey comprises all the activities of an employer in a particular state or territory based on the Australian Business Number (ABN) unit or Type of Activity Unit (TAU). Each statistical unit is classified to an industry which reflects the predominant activity of the business. Variables used to stratify the survey frame are:

- public/private sector;
- industry;
- state/territory; and
- employment size – the ranges used vary between states/territories and industries.

Statistical units with benchmark employment greater than a set cut off (this cut off will vary for different states/territories) are completely enumerated. Strata with a very small number of statistical units may also be completely enumerated, but such strata may become sampled strata if the number of units increases sufficiently. Within each stratum, statistical units are selected with equal probability.

Sample selection is constrained by ensuring that there is minimum overlap with other labour-related business surveys.

For details on the ABS Business Register and ABS economic units model, see the Methods

used in ABS Business Surveys (https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/6102.0.55.001~Feb%202018~Main%20Features~Methods%20used%20in%20ABS%20Business%20Surveys~33) chapter in Labour Statistics: Concepts, Sources and Methods.

Sample size

Approximately 5,500 statistical units are selected in the sample to yield a live sample of approximately 5,130 units. The sample is allocated optimally across the strata using a technique designed to minimise the variance of job vacancies estimates at both the national and state/territory level.

Sample rotation

The sample is updated each quarter to reflect changes in the ABS Business Register. Sample rotation is implemented for the majority of strata, but is not implemented where the population of a stratum is so small that units rotating out of the sample would be rotated back in after only a short interval. Approximately 8% of the sample for the non-completely enumerated strata is replaced each quarter.

How the data is processed

Estimation

Number raised estimation is used in all strata.

For non-responding units in the sampled strata, the Live Respondent Mean method of imputation is used.

For non-responding units in the completely enumerated (CE) strata, an imputed growth rate is applied to the previous quarter's reported value for that unit. Growth rates are estimated for each industry division, based on data provided by CE units in the current and previous quarter. Where data for non-responding CE units have not been reported in the previous quarter, ratio imputation is used. The ratio of job vacancies to benchmark employment is calculated at industry division level for responding units from the current quarter. This ratio is then applied to the benchmark employment for the non-responding unit to arrive at the imputed value for job vacancies.

Since the May 2020 quarter, the JVS imputation processes have been further refined to incorporate JobKeeper recipient information in the imputation class structure. This improved the accuracy of imputation for the small number of businesses unable to respond this quarter, by better controlling for COVID-19 impacts. Even though the JobKeeper subsidy

has now ceased, the ABS has determined that JobKeeper recipients in March 2021 still reported vacancies sufficiently different to other businesses. Based on this, the decision was made to continue to use the JobKeeper recipient information in the imputation class structure for the May 2021 job vacancies estimates.

Survey estimates include an adjustment called Business Provisions, to allow for births and resurrections of businesses that have occurred up to the end of the survey reference period but which are not reflected on the survey frame.

For further information on estimation methods used in ABS business surveys, refer to the Methods used in ABS Business Surveys (https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/6102.0.55.001~Feb%202018~Main%20Features~Methods%20used%20in%20ABS%20Business%20Surveys~33) chapter in Labour Statistics: Concepts, Sources and Methods.

Seasonal adjustment and trend estimation

Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences can be more clearly recognised. Seasonal adjustment does not aim to remove the irregular or non-seasonal influences which may be present in any particular series. Influences that are volatile or unsystematic can still make it difficult to interpret the movement of the series even after adjustment for seasonal variation. This means that quarter-to-quarter movements of seasonally adjusted estimates may not be reliable indicators of trend behaviour.

Seasonally adjusted estimates can be smoothed to reduce the impact of irregular or non-seasonal influences. Smoothed seasonally adjusted series are called trend estimates. The ABS considers that trend estimates provide a more reliable guide to the underlying direction of the data, and are more suitable than either the seasonally adjusted or original estimates for most business decisions and policy advice.

During the COVID-19 period, the ABS will use forward seasonal factors to produce seasonally adjusted estimates at the Australia level and for the public sector. Forward factor adjustments are generally better suited to managing large movements at the end point of a series and ensure that large movements do not have a disproportionate influence on the seasonal factors.

Due to a non-seasonal span in the private sector series, the forward factor approach is not considered suitable and the concurrent adjustment method was retained for this series.

Commencing with the May 2020 quarter, all trend series have been suspended until more certainty emerges in the underlying trend in job vacancies estimates over the COVID-19

period. The ABS will review this treatment in future quarters.

For a more detailed discussion on the implications of unusual events on time series, see Seasonal adjustment throughout periods of significant disruption and uncertainty (https://www.abs.gov.au/statistics/research/seasonal-adjustment-throughout-periods-significant-disruption-and-uncertainty)

Reliability of estimates

Estimates are subject to sampling and non-sampling errors. For information on the reliability of estimates see the Technical Note.

Rounding

Estimates have been rounded and discrepancies may occur between sums of the component items and totals. Estimates of percentage change have been calculated using unrounded estimates, and may be different from, but are more accurate than, movements obtained from calculating percentage change using the rounded estimates presented in this release.

Suspension of job vacancies survey between May 2008 and November 2009

The JVS was suspended following the May 2008 survey and was reinstated for the November 2009 survey. As a result, there is a gap in all series: original, seasonally adjusted and trend, for five periods between August 2008 and August 2009 inclusive. The Australian Bureau of Statistics (ABS) cannot produce reliable estimates by collecting this missing data retrospectively, and has not been able to fill the gap using other data sources.

Modelled data, at the Australia by sector level only, have been used in the calculation of trend and seasonally adjusted estimates for the three cycles either side of the gap period. The modelled data, which is for the gap period from August 2008 to August 2009 inclusive, are not part of the JVS series and are not available for release from this publication.

For further information, see Information Paper: Reinstatement of Job Vacancies Survey (https://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/C70389FBAF4FAC93CA2576BF0014C1B0?OpenDocument) .

How the data is released

Survey output

Data are available by:

- State and Territory
- Sector (Public/Private); and
- Industry.

Data on job vacancies by sector are available on original, seasonally adjusted and trend basis. Data for industries, and for states and territories, are only available on an original basis.

Related publications

Users may also wish to refer to the following publications:

- Labour Force, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6202.0?OpenDocument) - issued monthly;
- Labour Account Australia (https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-account-australia/latest-release) - issued quarterly;
- Jobs in Australia (https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/1AAB93864CFFC7D3CA25830C00141FAA?OpenDocument) - issued annually;
- Employment and Earnings, Public Sector, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6248.0.55.002) - issued annually;
- Labour Statistics: Concepts, Sources and Methods (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6102.0.55.001) .

History of changes

History of changes

In order to provide a high degree of consistency and comparability over time, changes to survey methods, concepts, data item definitions, and frequency of collection are made as infrequently as possible. Significant changes have included:

2020

- Revisions to the Administration and support services industry implemented in the February 2020 issue
- Imputation methodology refined to include JobKeeper registration information in the imputation class structure in the May 2020 issue
- Trend estimates were suspended temporarily from May 2020
- Forward seasonal factors replaced concurrent adjustment for the Australia and public sector series, commencing with May 2020 issue

2018

- Redesigned survey sample implemented in February 2018 issue

2017

- From the November 2017 issue, winsorisation methodology was introduced as the primary method to treat outliers in JVS replacing 'surprise outliering'

2014

- Seasonally adjusted estimates for the private sector reinstated in February 2014 as the series is again showing identifiable seasonality
- Online electronic collection introduced from February 2014 reference period

2010

- Estimates from reinstated survey first published for the February 2010 reference period
- Trend estimates for November 2009 onwards reintroduced from the August 2010 issue

2009

- Survey reinstated for the November 2009 reference period
- Survey sample and outputs redesigned on ANZSIC 2006 industry basis from November 2009, but historical ANZSIC 1993 series up to May 2008 were not backcast
- Updated employment benchmarks on the business survey frame to reflect more up-to-date information for use in stratification and estimation
- Incorporated changes to the SISCA, Public/Private and level of Government classifications

2008

- Seasonally adjusted estimates for the private sector temporarily suspended due to a lack of identifiable seasonality in February and May 2008 (seasonally adjusted estimates match the corresponding original estimates)
- Survey suspended for five quarters from August 2008 to August 2009 inclusive

2006

- Concurrent seasonal adjustment method introduced, replacing the forward factor adjustment method previously used

2003

- Collection of number of employees discontinued
- Publication of job vacancy rate discontinued

2002

- Changes to the ABS Business Register and the ABS statistical units model arising from the New Tax System (changes did not affect the continuity of the key statistical series)

1999

- Introduction of Live Respondent Mean imputation for the sampled sector, and the Business Provisions adjustment for the private sector
- Overtime component discontinued
- Significant improvement in procedures, particularly coverage of vacancies within

statistical units

1998

- Treatment of Australian Public Service vacancies changed (from being excluded to being included) after vacancies were made available to all Australian citizens

1994

- Survey redesigned on an ANZSIC (1993) industry basis. The historical Industry series data was back cast on an ANZSIC 1993 basis
- Sample rotation increased from approximately 5% to approximately 8% in rotating strata

1993

- Trend estimates published for the first time

1989

- Seasonally adjusted series produced for the first time (November)
- Collection of job vacancies registered with CES discontinued
- Job Vacancies, Australia (cat. no. 6231.0) and Overtime, Australia (cat. no. 6330.0) merged into Job Vacancies and Overtime, Australia publication (cat. no. 6354.0)

1988

- ABS publication of job vacancies registered with the CES discontinued, with the data available via special data service

1985

- Job vacancies data published by sector for the first time

1982

- Collection of vacancies classified by sex discontinued

1980

- First collection of job vacancies registered with the Commonwealth Employment Service (CES) (continued on annual basis)

1979

- Quarterly survey reintroduced
- Treatment of Australian Public Service vacancies changed to exclude "vacancies" only available to public service employees

1978

- Annual and quarterly surveys discontinued

1977

- Introduction of a smaller scale quarterly telephone-based survey
- Sample based on lists of private and public employers

1974

- Annual Job Vacancies Survey via mail-out commenced (largely to investigate practicality of a JVS)

Glossary

Show all

Data type

Job vacancy estimates are a stock (https://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/b81ecff00cd36415ca256ce10017de2f!OpenDocument#WHAT%20ARE%20STOCK%20AND%20FLOW%20SERIES%3F) data type, as the number of job vacancies is measured at a point in time.

Industry

Industry is classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) .

Job vacancy

A job vacancy is a job available for immediate filling on the survey reference date and for which recruitment action has been taken. Recruitment action includes efforts to fill vacancies by advertising, by on site or online notices, by notifying employment agencies or trade unions and by contacting, interviewing or selecting applicants already registered with the enterprise or organisation.

Estimates of job vacancies exclude:

- jobs not available for immediate filling on the survey reference date;
- jobs for which no recruitment action has been taken;
- jobs which became vacant on the survey date and were filled on the same day;
- jobs of less than one day's duration;
- jobs only available to be filled by internal applicants within an organisation;
- jobs to be filled by employees returning from paid or unpaid leave or after industrial disputes;
- vacancies for work to be carried out by contractors; and

- jobs for which a person has been appointed but has not yet commenced duty.

Reference date

The reference date for the survey is the third Friday of the middle month of the calendar quarter. The reference date for the current survey is 21 May 2021.

Sector

Public sector comprises local government authorities and all government departments and agencies created by, or reporting to the Commonwealth or State/Territory Parliaments. The private sector comprises all organisations not classified as public sector.

Abbreviations

Show all

ABN	Australian Business Number
ABR	Australian Business Register
ABS	Australian Bureau of Statistics
ABSBR	Australian Bureau of Statistics Business Register
ANZSIC	Australian and New Zealand Standard Industrial Classification
ATO	Australian Taxation Office
EG	Enterprise Group
JVS	Job Vacancies Survey
LE	Legal Entity
PAYGW	Pay-As-You-Go Withholding
SISCA	Standard Institutional Sector Classification of Australia
TAU	Type of Activity Unit
TOBE	Type of Business Entity
TOLO	Type of Legal Organisation

Quality declaration - summary

Institutional environment

For information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and

mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment (https://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/10ca14cb967e5b83ca2573ae00197b65!OpenDocument) .

Relevance

The Job Vacancies Survey (JVS) produces quarterly estimates of job vacancies based on information obtained from a sample of employers. A job vacancy is a job available for immediate filling on the survey reference date and for which recruitment action has been taken. Job vacancies data are used as a leading indicator of employment growth, in monitoring of the Australian economy, and for formulating economic policy.

Job vacancies data are available by state/territory, industry and sector. Seasonally adjusted and trend estimates are produced for Australia by sector series.

Timeliness

The JVS reference date is the third Friday of the middle month of the quarter, i.e. February, May, August and November. Job vacancies data relate to the number of vacancies which exist on the actual reference date only, and not for a monthly or quarterly period.

Job vacancy estimates are released approximately six weeks after the reference date, with the exception of estimates for each November which, due to the Christmas and New Year period, are released eight weeks after the reference date.

Accuracy

Information for the JVS is collected by online form and/or telephone from a sample of approximately 5,500 employers. The employer sample selected is stratified by state, industry division and employment size to ensure adequate state, and industry representation. A minimum response rate of 95% is generally achieved.

There are two principal sources of error in surveys, sampling error and non-sampling error. Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise non-sampling error by the careful design and testing of questionnaires, detailed checking of the reported data and direct follow up with providers where significant errors are detected.

Sampling error occurs when a sample or subset of the population is surveyed rather than the entire population. One measure of the likely difference resulting from not including all

of the population in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if the whole population had been included in the survey.

Estimates of job vacancies are seasonally adjusted to remove the estimated effects of normal seasonal variation from the series. The seasonally adjusted series are further smoothed to reduce the impact of irregular or non-seasonal factors. Smoothed seasonally adjusted series are called trend estimates. As data becomes available for the next quarter there are usually revisions in the trend estimates for the most recent preceding quarters.

The ABS considers that trend estimates provide a more reliable guide to the underlying direction of the original estimates and are more suitable than either the seasonally adjusted or original estimates for most business decisions and policy advice.

Coherence

The current job vacancies series, based on information obtained from a sample survey of employers on the ABS Business Register, was introduced in November 1983. Prior to November 1983 the job vacancies series was based on information obtained from a sample of businesses which submitted payroll tax returns. The survey was suspended from August 2008 to August 2009 (inclusive) and was re-instated for November 2009.

Data collection methodology have been improved over time, including survey definitions and sample design. Seasonally adjusted estimates were introduced in 1984 and trend estimates were introduced in 1993.

The JVS uses Australian standard classifications to facilitate data comparability across statistical series. Industry data from November 2009 are classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) . Data for earlier series are classified to the 1993 edition of ANZSIC (https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/E05F0987CD26ABF0CA257122001AC9BC?opendocument) .

Interpretability

Job Vacancies, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6354.0) contains a Methodology section with explanatory notes which provide further information about data sources, terminology and other technical aspects of the series.

Accessibility

Job Vacancies, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6354.0) is available electronically from the ABS website and includes downloadable Excel data files for time series data.

No further data breakdowns are available other than what is published on the ABS website.

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070. The ABS Privacy Policy (https://www.abs.gov.au/privacy) outlines how the ABS will handle any personal information that you provide to us.

Technical note - sampling error

Reliability of estimates

As the estimates in this release are based on information relating to a sample of employers rather than a full enumeration, they are subject to sampling variability. That is, they may differ from the estimates that would have been produced if the information had been obtained from all employers. This difference, called sampling error, should not be confused with inaccuracy that may occur because of imperfections in reporting by respondents or in processing by the ABS. Such inaccuracy is referred to as non-sampling error and may occur in any enumeration whether it be a full count or sample. Efforts have been made to reduce non-sampling error by careful design of questionnaires, detailed checking of returns and quality control of processing.

The sampling error associated with any estimate can be estimated from the sample results. One measure of sampling error is given by the standard error which indicates the degree to which an estimate may vary from the value which would have been obtained from a full enumeration (the 'true value'). There are about two chances in three that a sample estimate differs from the true value by less than one standard error, and about 19 chances in 20 that the difference will be less than two standard errors.

An example of the use of a standard error on levels is as follows. If the estimated number of job vacancies was 25,000 with a standard error of 2,500, then there would be about two chances in three that a full enumeration would have given an estimate in the range 22,500 to 27,500 and about 19 chances in 20 that it would be in the range 20,000 to 30,000.

An example of the use of a standard error for a quarterly change estimate is as follows. If the estimated standard error for a quarterly change estimate of job vacancies was 1,000 and the quarterly change estimate between two quarters was 4,500, then there would be

about two chances in three that a full enumeration would have given a quarterly change estimate in the range +3,500 to +5,500 and about 19 chances in 20 that it would be in the range +2,500 to +6,500.

Quarterly movements in estimates of job vacancies are considered to be statistically significant where they exceed two standard errors.

Another measure of the sampling error (for level estimates only) is the relative standard error, which is obtained by expressing the standard error as a percentage of the estimate to which it refers. Level estimates with a relative standard error between 25% and 50%, denoted by an asterisk in this release, are subject to sampling variability generally considered to be too high for most practical purposes and should be used with caution. Level estimates with a relative standard error of 50% or more, denoted by a double asterisk, are considered to be too unreliable for general use.

The following two tables shows the standard errors for quarterly level and movement for States and territories by Sector, based on original data for the current quarter. The third table shows the standard errors for level estimates by industry.

Standard Errors ('000), quarterly level job vacancies by sector and states and territories - May 2021

	Private	Public	Total
New South Wales	6.3	1.4	6.4
Victoria	4.9	0.4	4.9
Queensland	4.7	0.6	4.7
South Australia	2.1	0.1	2.1
Western Australia	4.1	0.4	4.1
Tasmania	0.9	0.1	0.9
Northern Territory	0.5	0.2	0.5
Australian Capital Territory	0.9	0.1	0.9
Australia	10.9	1.8	11.1

Standard Errors ('000), quarterly movement job vacancies by sector and states and territories - May 2021

	Private	Public	Total
New South Wales	5.5	0.4	5.5
Victoria	6.1	0.3	6.1
Queensland	4.3	0.3	4.3
South Australia	1.4	0.1	1.4
Western Australia	3.4	0.5	3.4
Tasmania	0.9	0.1	0.9
Northern Territory	0.5	0.2	0.5
Australian Capital Territory	0.7	0.1	0.8
Australia	10.5	0.7	10.5

Standard Errors ('000), Job Vacancies - Industry

	February 2020	May 2020	August 2020	November 2020	February 2021	May 2021
Mining	0.3	0.2	0.3	0.4	0.4	0.4
Manufacturing	1.5	1.4	2.3	2.1	2.5	2.3
Electricity, gas, water and waste services	0.2	0.2	0.2	0.2	0.2	0.4
Construction	2.8	2.1	2.8	2.8	3.9	4.4
Wholesale trade	1.8	1.6	1.9	2.1	2.2	2.2
Retail trade	2.0	2.3	2.3	3.0	2.7	3.2
Accommodation and food services	2.4	1.7	2.9	3.6	3.7	3.7
Transport, postal and warehousing	0.8	0.4	0.6	0.8	1.1	1.3
Information media and telecommunications	0.4	0.2	0.3	0.3	0.4	0.3
Financial and insurance services	0.7	0.5	1.1	1.1	1.1	1.7
Rental, hiring and real estate services	0.7	0.4	0.9	0.8	0.8	1.3
Professional, scientific and technical services	3.3	2.9	4.3	3.5	4.0	3.9
Administrative and support services	2.5	1.5	2.1	2.5	2.8	3.0
Public administration and safety	0.7	0.7	0.8	1.1	0.9	0.9
Education and training	0.9	0.6	1.2	1.0	1.0	1.3
Health care and social assistance	2.6	2.3	2.1	2.6	2.8	3.6
Arts and recreation services	0.2	0.1	0.1	0.7	0.3	0.6
Other services	1.6	1.0	1.7	1.7	2.2	2.1

Related information

- Australian Labour Market Statistics - July 2014 (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6105.0?OpenDocument)
- Average Weekly Earnings, Australia - May 2020 (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6302.0?OpenDocument)
- Employee Earnings and Hours, Australia - May 2018 (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6306.0?OpenDocument)
- Labour Force, Australia - Feb 2021 (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6202.0?OpenDocument)
- Labour Statistics: Concepts, Sources and Methods - Feb 2018 (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6102.0.55.001?OpenDocument)
- Employment and Earnings, Public Sector, Australia - 2018-19 (https://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/6248.0.55.002?OpenDocument)